Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A heat-assisted magnetic recording head, comprising:

a thin film magnetic transducer having a pair of yokes and generating a magnetic field in a magnetic gap between two magnetic poles at the ends of the pair of yokes, wherein the electric resistance of at least one of the two magnetic poles is higher than that of the two yokes; and

a heater placed in the vicinity of the magnetic gap and generating heat with an electric current,

wherein a part of a magnetic recording medium in the vicinity of the magnetic gap is heated by the heater to reduce a magnetic-coercive of the part of the magnetic recording medium and the magnetic field generated by the thin film magnetic transducer is applied to the part of the magnetic recording medium, and the heater includes a conductor placed at the magnetic gap and electrically connected to the two magnetic poles, the conductor applying an electric current to the heater through the yokes to generate heat.

2. (Canceled)

3. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein the electric resistance of the conductor is higher than that of the two magnetic poles.

4. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein the electric resistance of the conductor is lower than that of the two magnetic poles.

5. (Canceled)

6. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein the Curie temperature of the two magnetic poles is higher than that of the two yokes.

7. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein the two yokes of the thin-film magnetic transducer is electrically insulated with an insulator inserted therebetween.

8. (Original) The heat-assisted magnetic recording head according to claim 7, wherein the insulator is made of ferrite.

9. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein the yoke is made of a low electric resistance material.

10. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein the yoke is made of staked thin films.

11. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein each of the yokes includes each of a pair of electrodes.

12. (Previously Presented) The heat-assisted magnetic recording head according to claim 1, wherein the thin film magnetic transducer includes a third magnetic pole, wherein the two magnet poles and the third magnetic pole are arranged in line.

13-14. (Canceled)

15. (Currently Amended) ~~The heat-assisted magnetic recording apparatus according to claim 13~~ A heat-assisted magnetic recording apparatus, comprising:

a magnetic recording medium;

a heat-assisted magnetic recording head having a thin-film magnetic transducer having a pair of yokes having magnetic poles, respectively, the thin-film transducer generating a magnetic field in a magnetic gap between the two magnetic poles, and a heater placed in the vicinity of the magnetic gap and generating heat; and

a scanning unit that scans the heat-assisted magnetic recording head on the magnetic recording medium,

wherein a part of the magnetic recording medium in the vicinity of the magnetic gap is heated by the heater to reduce a magnetic-coercive of the part of the magnetic recording medium and the magnetic field generated by the thin-film transducer is applied to the part of the magnetic recording medium, and the heater includes a conductor placed at the magnetic gap and electrically connected to the two magnetic poles, the conductor applying an electric current to the heater through the yokes to generate heat, and

wherein the electric current applied to the heater is increased as the head is scanned from the inner part to the outer part along the radius of the magnetic recording medium.

16. (Canceled)

17. (Currently Amended) ~~The heat-assisted magnetic recording apparatus according to claim 16~~ A heat-assisted magnetic recording apparatus, comprising:

a magnetic recording medium;

a heat-assisted magnetic recording head having a thin-film magnetic transducer having a pair of yokes having magnetic poles, respectively, the thin-film transducer generating a magnetic field in a magnetic gap between the two magnetic poles, and a heater placed in the vicinity of the magnetic gap and generating heat; and

a scanning unit that scans the heat-assisted magnetic recording head on the magnetic recording medium,

wherein a part of the magnetic recording medium in the vicinity of the magnetic gap is heated by the heater to reduce a magnetic-coercive of the part of the magnetic recording medium and the magnetic field generated by the thin-film transducer is applied to the part of the magnetic recording medium, and the heater includes a conductor placed at the

magnetic gap and electrically connected to the two magnetic poles, the conductor applying an electric current to the heater through the yokes to generate heat,

wherein the electric current is applied to the heater in a pulsed form before the magnetic field is applied, and

wherein the pulse width of the electric current is narrower than that of a current generating the magnetic field.

18. (Original) The heat-assisted magnetic recording head according to claim 1, wherein the heater includes a heat generating member placed at the magnetic gap and generating heat with the electric current.

19. (Original) The heat-assisted magnetic recording head according to claim 18, wherein the heat generating member is a conductive element.

20. (Original) The heat-assisted magnetic recording head according to claim 18, wherein at least one of the two magnetic poles acts as the heat generating member.

21. (Original) The heat-assisted magnetic recording head according to claim 18, wherein the heat generating member is made of a high electric resistive material.

22. (Original) The heat-assisted magnetic recording head according to claim 19, wherein a dielectric spacer is placed between the heater and at least one of the magnetic poles.

23. (Original) The heat-assisted magnetic recording head according to claim 18, wherein the heater is connected to a pair of electric wires for feeding electric current to the heater.

24. (Original) The heat-assisted magnetic recording head according to claim 23, wherein the pair of electric wires are arranged perpendicular to the two magnetic yokes.

25. (Original) The heat-assisted magnetic recording head according to claim 19, wherein the thin-film magnetic transducer includes a third magnetic pole, and the two magnet poles and the third magnetic pole are arranged in line.

26. (Canceled)

27. (Currently Amended) ~~The heat-assisted magnetic recording apparatus according to claim 26,~~ A heat-assisted magnetic recording apparatus, comprising:

a magnetic recording medium;

a heat-assisted magnetic recording head having a thin-film magnetic transducer having a pair of yokes having magnetic poles, respectively, the thin-film transducer generating a magnetic field in a magnetic gap between the two magnetic poles, and a heater placed in the vicinity of the magnetic gap and generating heat; and

a scanning unit that scans the heat-assisted magnetic recording head on the magnetic recording medium,

wherein a part of the magnetic recording medium in the vicinity of the magnetic gap is heated by the heater to reduce a magnetic-coercive of the part of the magnetic recording medium and the magnetic field generated by the thin-film transducer is applied to the part of the magnetic recording medium, and the heater includes a conductor placed at the magnetic gap and electrically connected to the two magnetic poles, the conductor applying an electric current to the heater through the yokes to generate heat,

wherein the heater includes a heat generating member placed in the magnetic gap and electrically connected to the two magnetic poles, and an electric current is applied to the heat generating member through the yokes to heat the vicinity of the magnetic gap, thereby heating the magnetic recording medium, and

wherein the electric current applied to the heat generating member is increased as the head is scanned from the inner part to the outer part along the radius of the magnetic medium.

28. (Canceled)

29. (Currently Amended) ~~The heat-assisted magnetic recording apparatus according to claim 28,~~ A heat-assisted magnetic recording apparatus, comprising:

a magnetic recording medium;

a heat-assisted magnetic recording head having a thin-film magnetic transducer having a pair of yokes having magnetic poles, respectively, the thin-film transducer generating a magnetic field in a magnetic gap between the two magnetic poles, and a heater placed in the vicinity of the magnetic gap and generating heat; and

a scanning unit that scans the heat-assisted magnetic recording head on the magnetic recording medium,

wherein a part of the magnetic recording medium in the vicinity of the magnetic gap is heated by the heater to reduce a magnetic-coercive of the part of the magnetic recording medium and the magnetic field generated by the thin-film transducer is applied to the part of the magnetic recording medium, and the heater includes a conductor placed at the magnetic gap and electrically connected to the two magnetic poles, the conductor applying an electric current to the heater through the yokes to generate heat,

wherein the heater includes a heat generating member placed in the magnetic gap and electrically connected to the two magnetic poles, and an electric current is applied to the heat generating member through the yokes to heat the vicinity of the magnetic gap, thereby heating the magnetic recording medium,

wherein the electric current is applied to the heat generating member in a pulsed form before the magnetic field is applied, and

_____wherein the pulse width of the electric current is narrower than that of a current generating the magnetic field.